

Module 3 - Calibration

ME3023 - Measurements in Mechanical Systems

Mechanical Engineering

Tennessee Technological University

Topic 2 - The Calibration Curve

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- What is Calibration?
- Generalized Curve
- Static Sensitivity and Zero Offset
- Example: IR Distance Sensor

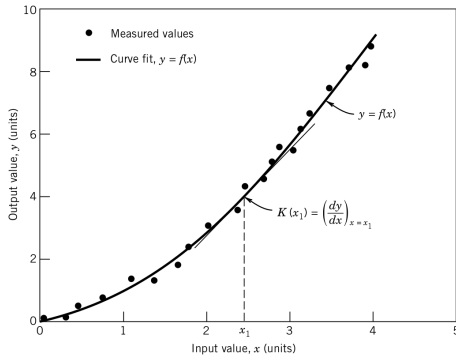
What is Calibration?

A **calibration** applies a known **input value** to a measurement system for the purpose of observing the system **output value**. It establishes the relationship between the input and output values. The known value used for the **calibration** is called the **standard**.

- A range of input values can be used to form a calibration curve.
- The calibration curve describes the input-output relationship of the measurement system.

Text: Theory and Design of Mechanical Measurements, 5th Edition,

Generalized Curve



y: measured signal
(output)

x: known standard
(input)

Question: How many values are needed for a calibration? Why?

Static Sensitivity and Zero Offset

You have learned about these by a a different name.

Static Sensitivity - The Slope of the Calibration Curve

Zero Offset - Y-Intercept of Calibration Curve

Question: How many parameters or variables are needed to describe the curve?

Example: IR Distance Sensor

